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## REFERENCES

1. Solter D, Knowles BB: Monoclonal antibody defining a stage specific embryonic antigen (SSEA-1). *Proc Natl Acad Sci USA* 75:5565-5569, 1978
2. Gooi HC, Feizi T, Kapadia A, Knowles BB, Solter D, Evans MJ: Stage-specific embryonic antigen involves  $\alpha$ 1-3 fucosylated type 2 blood group chains. *Nature* 292:156, 1981
3. Shi ZR, McIntyre LJ, Knowles BB, Solter D, Kim YS: Expression of a carbohydrate differentiation antigen, stage specific embryonic antigen 1, in human colonic adenocarcinoma. *Cancer Res* 44:1142-1147, 1984
4. Fukushi Y, Kannagi R, Hakomori S, Shepard T, Kulauder B, Singer J: Location and distribution of difucoganglioside (VI3NeuAc V3III3Fuc2nLc6) in normal and tumor tissues defined by its monoclonal antibody FH6. *Cancer Res* 45:3711-3717, 1985
5. Fukushima K, Hirota M, Terasaki P, Wakisaka A, Tagashi H, Chia D, Suyama N, Fukushi Y, Nudelman E, Hakomori S: Characterization of sialosylated Lewis<sup>x</sup> as a new tumor-associated antigen. *Cancer Res* 44:5279-5285, 1984
6. Kannagi R, Fukushi Y, Tachikawa T, Noda A, Shin S, Shigeta K, Hiraiwa N, Fukuda Y, Inamoto T, Hakomori S, Imura H: Quantitative and qualitative characterization of human cancer-associated serum glycoprotein antigen expressing fucosyl or sialyl-fucosyl type 2 chain polylactosamine. *Cancer Res* 46:2619-2626, 1986
7. Itzkowitz S, Yuan M, Fukushi Y, Palekar A, Phelps P, Shamsuddin A, Trump B, Hakomori S, Kim Y: Lewis<sup>x</sup>—sialylated Lewis<sup>x</sup>—related antigen expression in human malignant and nonmalignant colonic tissues. *Cancer Res* 46:2627-2632, 1986
8. Matusita Y, Cleary K, Ota D, Hoff S, Irimura T: Sialyl-dimeric Lewis<sup>x</sup> antigen expressed on mucin-like glycoproteins in colorectal cancer metastases. *Lab Invest* 63:780-791, 1990
9. Ohmori K, Yoneda T, Ishihara G, Shigeta K, Hirashima K, Kanai M, Itai S, Sasaoki T, Arita H, Kannagi R: Sialyl SSEA-1 antigen as a carbohydrate marker of human natural killer cells and immature lymphoid cells. *Blood* 74:255-261, 1989
10. Walz G, Aruffo A, Kolanus W, Revilacqua M, Seed B: Recognition by ELAM-1 of the Sialyl-Le<sup>x</sup> determinant on myeloid and tumor cells. *Science* 250:1132-1135, 1990
11. Philips M, Nudelman E, Gaeta FCA, Perez M, Singhal A, Hakomori S, Paulson J: ELAM-1 mediates cell adhesion by recognition of a carbohydrate ligand. *Science* 250:1130-1132, 1990
12. Polley M, Philips M, Wayner E, Nudelman E, Singhal A, Hakomori S, Paulson J: CD62 and endothelial cell-leukocyte adhesion molecule 1 (ELAM-1) recognize the same carbohydrate ligand, sialyl-Lewis<sup>x</sup>. *Proc Natl Acad Sci USA* 88:6224-6228, 1991
13. Zhou Q, Moore KL, Smith DF, Varki A, McEver RP, Cummings RD: The selectin GMP-140 binds to sialylated, fucosylated lactosaminoglycans on both myeloid and nonmyeloid cells. *J Cell Biol* 557-564, 1991
14. Dabelsteen E, Vedtofte P, Hakomori S, Young WW: Carbohydrate chains specific for blood group antigen in differentiation of human oral epithelium. *J Invest Dermatol* 79:3-7, 1982
15. Dabelsteen E, Buschard K, Hakomori S, Young WW: Pattern of distribution of blood group antigen on human epidermal cells during maturation. *J Invest Dermatol* 82:13-17, 1984
16. Zieske JD, Bernstein IA: Modification of cell surface glycoprotein: addition of fucosyl residues during epidermal differentiation. *J Cell Biol* 95:626-631, 1982
17. Dabelsteen E, Broby-Johansen U, Jeppe-Jensen D, Mandel U: Cell surface glycosylation patterns in psoriasis. *APMIS* 98:221-228, 1990
18. Hatchome N, Kato T, Tagami H: Therapeutic success of epidermal grafting in generalized vitiligo is limited by the Koebner phenomenon. *J Am Acad Dermatol* 22:87-91, 1990
19. Tamaki K, Stingl G, Gullino M, Sachs DH, Katz SI: Ia antigen in mouse skin are predominantly expressed on Langerhans cells. *J Immunol* 123:784-787, 1979
20. Aiba S, Tagami H: Immunohistologic studies in Schamberg's disease. *Arch Dermatol* 124:1058-1062, 1988
21. Picker LJ, Kishimoto TK, Smith CW, Warnock RA, Butcher EC: ELAM-1 is an adhesion molecule for skin-homing T cells. *Nature* 349:796-799, 1991
22. Picker LJ, Michie SA, Rott LS, Butcher EC: A unique phenotype of skin-associated lymphocytes in humans. *Am J Pathol* 136:1053-1068, 1990
23. Groves RW, Allen MH, Barker JNWN, Haskard DO, Macdonald DM: Endothelial leucocyte adhesion molecule-1 (ELAM-1) expression in cutaneous inflammation. *Br J Dermatol* 124:117-123, 1991
24. Katz SI, Tamaki K, Sachs DH: Epidermal Langerhans cells are derived from cells originating in bone marrow. *Nature* 282:324-326, 1979
25. Aiba S, Katz SI: Phenotypic and functional characteristics of in vivo-activated Langerhans cells. *J Immunol* 145:2791-2796, 1990
26. Romani N, Lenz A, Glassel H, Stossel H, Stanzyl U, Majdic O, Fritsch P, Schuler G: Cultured human Langerhans cells resemble lymphoid dendritic cells in phenotype and function. *J Invest Dermatol* 93:600-609, 1989
27. Schuller G, Steiman RM: Murine epidermal Langerhans cells mature into potent immunostimulatory dendritic cells in vitro. *J Exp Med* 161:526-546, 1985
28. Streilein JW, Grammer SF: In vitro evidence that Langerhans cells can adopt two functionally distinct forms capable of antigen presentation to T lymphocytes. *J Immunol* 143:3925-3933, 1989
29. Symington FW, Holmes EH, Symington BE: Human epidermal keratinocyte expression of sialyl-Lewis<sup>x</sup>. *J Invest Dermatol* 99:601-607, 1992

## ANNOUNCEMENT

Cutaneous Malignancies: 1994 Skin Cancer Update will be held Friday to Sunday, January 21-23, 1994, sponsored by Scripps Clinic and Research Foundation, at the Sheraton Grande Torrey Pines Hotel, La Jolla, California.

This course is designed for dermatologists, oculoplastic surgeons and ophthalmologists, head and neck surgeons, plastic surgeons, family practice physicians, and other physicians with an interest in skin cancers. This course will provide an update on cutaneous neoplasms, melanoma, and facial reconstruction. The combination of lectures and optional hands on cadaver laboratory sessions will expose the attendee to the latest information and techniques. The course will offer 17 hours of category I CME credit.

For further information contact Department of Academic Affairs, 403C, Scripps Clinic and Research Foundation, 10666 N. Torrey Pines Road, La Jolla, CA 92037. Telephone: (619) 554-8556; FAX: (619) 554-6310.